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Changing Immigrant Characteristics and Entry Earnings

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[r] revised
x suppressed to meet the confidentiality requirements of the *Statistics Act*
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Changing Immigrant Characteristics and Entry Earnings

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Abstract

During the 1990s and 2000s, changes in immigration selection policies significantly altered the characteristics of new immigrants to Canada across a number of dimensions, including educational attainment at landing, immigration class, source region, pre-landing Canadian work experience and geographic distribution. These changes were designed primarily to improve immigrant economic outcomes at landing. This paper examines whether immigrant entry earnings improved as a result of these changes in immigration selection and, if so, which characteristics contributed most to the improvement. Among all new immigrants and principal applicants in the economic class, entry earnings, abstracting from economic cyclical variation, changed little during the 1990s and 2000s. This stability was the result of competing influences: some that tended to increase earnings, and some that tended to reduce them (such as declined earnings returns to some characteristics). The key changes in immigrant characteristics that increased entry earnings were the rising educational attainment at landing in the 1990s and the large increase in the share of immigrants with pre-landing Canadian work experience during the 2000s. The latter characteristic also accounted for the earnings advantage of provincial nominees over skilled worker immigrants.

Keywords: immigration, entry earnings, Canadian work experience

Executive summary

Immigration selection policies changed significantly during the 1990s and 2000s, at least in part to improve immigrant entry earnings. After the decline in both relative (to the Canadian-born) and absolute entry earnings during the 1980s and early 1990s, there was a strong desire to improve the economic outcomes of immigrants shortly after their landing. Changes in selection policies and other factors altered immigrants' characteristics across a number of dimensions, including demographics, source region, work experience and geographic distributions. This paper examines whether immigrants' earnings immediately after their landing improved as a result of these changes and, if so, which characteristics contributed the most to this improvement.

Among all new immigrants, abstracting from economic cyclical variation, entry earnings—defined as earnings in the first two full years after landing—remained more or less constant throughout the 1990s and 2000s. The situation was very similar for principal applicants (PAs) in the economic class. During the 1990s, rising educational attainment at landing and the increasing share of immigrants in the economic class increased entry earnings. During the 2000s, a much more complex period in terms of immigrant selection, the factors that positively influenced immigrant entry earnings included changing distribution by immigration class, notably the rise of the Provincial Nominee Program (PNP); changing source region; and, for immigrant women, rising educational attainment at landing. These factors were offset by less favourable economic conditions in destination cities and regions in the late 2000s.

However, one factor dominated all others: the rise in the share of new immigrants who had Canadian work experience, often in high-paying jobs, prior to obtaining permanent residency. Changes in this factor tended to increase entry earnings during the 2000s far more than any other variable studied. The increase in pre-landing Canadian work experience accounted for most of the positive effect of the rise of the PNP on entry earnings during the 2000s, since the increase in work experience was heavily concentrated among provincial nominees. Furthermore, differences in pre-landing Canadian work experience between provincial nominees (with more Canadian work experience) and skilled workers (SWs) (with less) accounted for virtually all of the entry earnings advantage that the provincial nominees held over the SWs during the 2000s. While other factors, such as differences in geographic distribution (more settled in the West), educational attainment at landing, unemployment in the destination regions and cities, and source region, contributed, either in a small positive or negative manner, to the entry earnings differences between provincial nominees and SWs, their contribution paled in comparison with the pre-landing Canadian work experience factor. Once adjusted for differences in pre-landing Canadian work experience, entry earnings were virtually identical between provincial nominees and SWs. These conclusions were found for all new immigrants, as well as for PAs in the economic class, and were evident for both men and women.

It is likely that the pre-landing Canadian work experience variable used here captures at least three effects. First is the effect of Canadian work experience on earnings early in immigrants' working life after landing. Employers appear to be more willing to remunerate such experience relative to foreign work experience. Second, this variable may also reflect a selection effect. When immigrants are selected from the pool of temporary foreign workers, they come with information regarding how well they performed in their jobs in Canada. If an employer seeks to change the status of temporary foreign workers to a permanent one, it is likely because they have done well in their jobs. Hence, much of the effect on entry earnings could be because of this selection process. Third, during the 2000s, many of the workers on temporary visas who attained permanent status worked in high-paying jobs.

1 Introduction

Canada significantly altered the selection policies for economic immigrants during the 1990s and 2000s, at least in part to improve the economic outcomes of immigrants shortly after their landing (see Ferrer, Picot and Riddell [2014] for a review). The policy changes, combined with other pressures, altered the characteristics of new immigrants. During the 1990s, there was a significant rise in the educational attainment at landing of new immigrants and an increase in the share of immigrants in the economic class. During the 2000s, a rising number of immigrants had worked on temporary work visas and, consequently, had Canadian work experience before landing. An increasing share of immigrants entered via the Provincial Nominee Program (PNP), with fewer settling in Toronto and more settling in the West. Immigrants' educational attainment also decreased somewhat, and the source-region composition changed significantly. This paper examines whether these changes significantly affected entry earnings during the 1990s and 2000s and, if so, which factors were the most important in increasing entry earnings.

Much of the previous economic research on immigration focused on the decline during the 1980s and early 1990s in immigrants' earnings relative to the Canadian-born immediately after landing. The extent of this decline and possible explanations for it have been well documented (Aydemir and Skuterud 2005; Hou 2013; Picot and Sweetman 2012; Reitz 2007). But entry earnings declined in absolute terms, not just relative terms. Using census data, Frenette and Morissette (2005) found that immigrants' average earnings during the first five years after landing declined 15% between 1980 and 1990, and declined another 13% by 1995.

This paper examines whether or not entry earnings subsequently improved. It focuses on the 2000s, when significant changes were made to immigrant selection. However, it briefly analyzes the 1980s and 1990s as well. This paper further examines the role that changes to immigrant selection and related changes in immigrant characteristics—including demographics, immigration class, source region, geographic distribution and pre-landing Canadian work experience—played in any improvement.[1] In particular, it considers whether the rise of the PNP during the 2000s improved entry earnings and, if so, why. Entry earnings are defined as an individual's average annual earnings during the first two full years after becoming a permanent resident.

2 Changing immigration policy

Changes in immigration policy significantly alter immigrants' traits (Beach, Green and Worswick 2011). In the early 1990s, the points system was revised to attract more highly educated immigrants, and the share of immigrants entering in the economic class was increased. These changes increased the entry earnings of immigrants selected under the points system, i.e., the principal applicants (PAs) (Picot and Hou 2009). However, PAs constitute about 20% of all immigrants, so these results tell us little about what happened to entry earnings for immigrants as a whole. In the early 2000s, the selection system was revised once more under the *Immigration and Refugee Protection Act* (IRPA). The points allocated to higher levels of education at landing were again increased, and English- and French-language requirements and tests were strengthened. The changes to selection policies in the IRPA also resulted in a significant decline in the concentration of immigrants entering through the economic class in particular occupations (e.g., a reduction in the large share of immigrants who are engineering and information-technology professionals), and affected the share of immigrants from particular source countries

1. This paper is not an attempt to explain changes in entry earnings entirely. In addition to changing background characteristics, other factors may influence the economic returns of any given characteristic, such as education, foreign work experience (age at landing), pre-landing Canadian work experience, or source region. Such changes are not investigated here. For example, during the 1980s and 1990s, employers were remunerating foreign work experience less and less over time (Aydemir and Skuterud 2005).

(e.g., a notable decrease in the share of immigrants from China and an increase in the share from the Philippines). The IRPA changes increased the entry earnings of PAs in the economic class (Citizenship and Immigration Canada 2010). The guiding principle behind the revisions to the points system in the 1990s and 2000s was to attract immigrants in the economic class who could respond successfully in the face of labour-market change and would perform well in the long run. This strategy is the essence of the human capital model of selection.

However, in the early 2000s, there were increasing concerns regarding the ability of the immigration system to respond to short-term occupational skill shortages. To mitigate these concerns and achieve other goals (e.g., meeting the needs of provinces in population growth and labour demand), some existing programs were expanded and new ones created. A greater share of immigrants was selected via the PNP, particularly in the West. A skilled-trades program was created, ministerial instructions (which allow Citizenship and Immigration Canada to respond to perceived occupational shortages) were implemented, and the Canadian Experience Class, which allows international students with Canadian work experience or foreign temporary workers to become landed immigrants under certain circumstances, was created. The share of new PAs who had worked in Canada on a temporary work visa prior to becoming permanent residents rose substantially during the 2000s (Hou and Bonikowska 2015). This too could affect entry earnings.

These policy changes and other economic pressures tended to alter immigrants' demographic characteristics, admission-class distribution, source regions, pre-landing Canadian work experience, and the cities or regions in which they settled. This paper focuses on how these policy changes affected trends in immigrant entry earnings.

3 Data and methods

The data in this study are derived from the Longitudinal Immigration Database (IMDB). The IMDB combines immigrant landing records and annual tax records for immigrants who arrived in Canada after 1979. Immigrants who have filed at least one tax return since 1982 are included in the database. Immigrant characteristics at landing—including age, education, marital status, source country, language and immigration category (e.g., skilled worker [SW], family and refugee)—are drawn from immigrant landing records. Information on earnings and other income, current marital status and place of residence is drawn from tax records. The sample for this study includes all immigrants who obtained permanent residency status between 1981 and 2010, and had positive earnings during at least one of their first two full years in Canada. The study includes immigrants aged 20 to 54 at landing.

To determine how these changes in immigrant characteristics affect entry earnings, "adjusted" entry earnings are produced by holding the characteristics of new immigrants fixed at the levels observed during the first year of the period of interest. The adjusted earnings represent those that would have been observed had the distribution of immigrant characteristics—including demographic characteristics, source region, pre-landing Canadian work experience and geographic distribution—not changed over time, and had the earnings returns of those characteristics remained at the average value observed over the period of interest (i.e., the 2000s). Hence, for any given year, the difference between the actual and adjusted entry earnings represents the earnings effect associated with the changes in the distribution of new immigrants' characteristics.

Three regression models are used to produce the adjusted earnings.

$$\text{Annual earnings} = \beta_{cohort} * cohort_j + \sum \beta_{class} * Class + e \quad (1)$$

$$\text{Annual earnings} = \beta_{cohort} * cohort_j + \sum \beta_{class} * Class + \sum \beta_x * X + e \quad (2)$$

$$\text{Annual earnings} = \beta_{intercept} * cohort_i + \sum \beta_{class} * Class + \sum \beta_i * X + \beta_{exp} * Exp + e \qquad (3)$$

The dependent variable is annual earnings during the first two full years after becoming a permanent resident. As a check for robustness, results were also produced using the log of annual earnings as the dependent variable, and the main findings remained the same. Earnings are measured in 2011 constant dollars.

Model 1 has annual landing cohorts and immigration class. This class variable has eight categories: SW PA, provincial nominee (PN) PA, live-in caregiver PA, business class PA, economic class[2] spouses and dependants, family class, refugees, and others. The coefficients on these dummy variables represent the difference, observed over the period of study, in the actual average annual earnings between each class and the reference group (SW PAs in this case).

Model 2 adds all of the control variables except for pre-landing Canadian work experience. These variables include age at landing,[3] educational attainment[4] at landing, source region,[5] language,[6] geographic distribution,[7] and the unemployment rate of prime-age workers in each of the 14 Canadian regions in the year when earnings were measured (i.e., the regional unemployment rate). In Model 2, the coefficients on the immigration class variable represent the difference between each class and the SW PAs (the reference group), adjusted for differences by immigration class in the control variables.

Model 3 includes all the variables in Model 2 and adds pre-landing Canadian work experience. This variable has four levels based on annual earnings in Canada in at least one year prior to becoming permanent residents: over $50,000, from $20,000 to $50,000, under $20,000, and had no pre-landing Canadian work experience.[8]

These models are run for each of the three periods: from 1982 to 1988, from 1988 to 1999, and from 1999 to 2010. The last period includes the entry earnings years of 2000/2001 to 2011/2012, and the focus is on this period. The three periods were selected so that the period end points would roughly correspond to variations in the business cycle (see next section). The analysis is also conducted separately for two immigrant groups: first, for all new immigrants and, second, only for PAs in the economic class. Most of the changes to the selection system, particularly during the 2000s, focused on PAs in that class. The models are run separately for immigrant men and women.

A decomposition method is used to determine which of the many variables in the analysis affect changes in entry earnings the most. The "adjusted earnings" analysis determines the total change in entry earnings over the study period that is associated with the change in all characteristics. The decomposition determines the share of this total change that is accounted for by each

2. The economic class includes SWs, provincial nominees, live-in caregivers and the business class.
3. Age at landing is defined in seven groups: 20 to 24, 25 to 29, 30 to 34, 35 to 39, 40 to 44, 45 to 49, and 50 to 54.
4. There are five levels of educational attainment at landing: less than high school graduation, high school graduation, some postsecondary education, bachelor's degree, and graduate degree.
5. There are 10 source regions: the United States; Northern and Western Europe; Southern and Eastern Europe; Africa; East Asia (mainly China); South Asia (mainly India and Pakistan); Southeast Asia (mainly the Philippines and Vietnam); other Asian countries; the Caribbean and Central and South America; and Oceania and other countries.
6. There are seven language levels: English mother tongue; French mother tongue; English or French mother tongue, bilingual; other mother tongue, speaking English; other mother tongue, speaking French; other mother tongue, bilingual; and not speaking English or French.
7. There are 14 Canadian regions: Newfoundland and Labrador, Prince Edward Island, New Brunswick, Nova Scotia, Montréal, the rest of Quebec, Toronto, the rest of Ontario, Manitoba, Saskatchewan, Alberta, Vancouver, the rest of British Columbia, and the territories.
8. The models were re-run using the average earnings in the years prior to landing, rather than the maximum earnings, and the results were virtually identical.

variable, indicating which has the largest effect on immigrant entry earnings. Following a variant of the Oaxaca decomposition (Hou 2014), the contribution of explanatory variable x_i to the total 'explained difference'—accounted for by all the predictors X_i in the model—is computed as $\frac{(\overline{X}_{i1} - \overline{X}_{i0})\beta_i}{\sum (\overline{X}_{i1} - \overline{X}_{i0})\beta_i}$, where $\overline{X}_{i0}$ is the mean of x_i at the beginning of the period, while $\overline{X}_{i1}$ is the mean of x_i at the end of the period, and β_i is the coefficient of variable x_i in the model with pooled data of all landing cohorts over the study period.

4 Results

4.1 Long-term trends in entry earnings

Earnings are highly cyclical for new immigrants. Compared with the comparison group,[9] immigrant entry earnings are more strongly influenced by the state of the Canadian economy; they typically increase during economic expansions and decline during recessions (Charts 1 and 2). Entry earnings fell during the recessions of the early 1980s and the early 1990s.

The period of the early 2000s was somewhat unique for immigrants. Compared with the recessions of the early 1980s and 1990s, the slowdown in the early 2000s was mild. The unemployment rate in Canada rose by 4 percentage points in the early 1980s and 1990s and by 1 percentage point in the early 2000s. In spite of that, entry earnings for immigrant men fell significantly during the early 2000s: between the 1999 and 2002 landing cohorts, they fell by 17% overall, and by 23% among university graduates. Among the 2002 landing cohort, entry earnings for graduate men with a bachelor's degree were only marginally higher than those for immigrants with a high-school education. Much of this unexpected decline was related to the bust in the information technology (IT) sector and the fact that a very high percentage of new immigrant men were in occupations related to engineering or computer science (Picot and Hou 2009). However, in the later 2000s, the IT bust faded and the economy expanded. Entry earnings recovered for immigrants—highly-educated immigrants in particular—and the entry earnings gap between the high-school educated and university-educated immigrants returned to its pre-2000 level.

Long-term trends net of cyclical fluctuations are delineated by focusing on earnings in 1982, 1989, 2000 and 2007, as well as the last data point, 2012.[10] Since entry earnings are defined here as the average of the first two full years in Canada, the long-term changes in earnings are examined between the landing cohorts of 1981 (earnings in 1982 and 1983), 1988 (earnings in 1989 and 1990), 1999 (earnings in 2000 and 2001) and 2010 (earnings in 2011 and 2012). The earnings years for these cohorts are close to the business cycle peaks. But, even among these peak years, there remain some differences in economic conditions, as measured by the unemployment rate.

9. From 1989 to 2010, the comparison group includes the Canadian-born, plus immigrants who have been in Canada for 10 years or more. That is because the dataset only identifies immigrants who entered Canada after 1980. Therefore, between 1981 and 1988, the comparison group includes all Canadian-born, plus immigrants who entered Canada prior to 1980. This means that, between 1981 and 1988, the earnings of the comparison group are somewhat underestimated relative to the earnings from 1989 to 2010. This paper focuses on the 1990s and the 2000s, and comparison group earnings are comparably defined for those periods.

10. The national unemployment rate was at its cyclical lows in 1981, 1989, 2000 and 2007. The rates among people of working age (25 to 54) for these years were 6.0%, 6.8%, 5.7%, and 5.1%, respectively. In 1982, the year used in this study, the rate was 9.9%. The unemployment rate in 2012—the last data point in this study—was 6.0%. The lowest unemployment rate in the early 1980s was in 1981, not 1982; however, the 1981 earnings are not available in the IMDB. Entry earnings would have fallen between 1981 and 1982, so the decline in entry earnings shown here between 1982 and 1989 is smaller than the decline between 1981 and 1989.

rience, in the regression models, annual unemployment rates of prime-age workers, at the regional level, are controlled for when computing adjusted earnings.

For immigrant men, entry earnings fell by 9.4% between the 1981 and 1989 landing cohorts (Chart 1 and Table 1). After the 1980s, there is little significant change in the long-term trend in entry earnings for immigrant men. However, since earnings among the comparison group rose during the 1982-to-2012 period, the earnings gap between new immigrant men and the comparison group increased almost continuously (excluding cyclical variation). Immigrant entry earnings for the 1981 cohort were 74% of those of the comparison group, falling to 64% for the 1988 cohort, 60% for the 1999 cohort, and 55% for the 2006 cohort, and recovering marginally to 57% for the 2010 cohort.[11]

Long-term entry earnings of immigrant women remained remarkably constant over the entire three decades,[12] abstracted from business cycle changes. Certainly, during the 1990s and 2000s, there was no sign of a significant change in earnings at cyclical peaks (Chart 2 and Table 1). Again, however, since earnings among the comparison group rose significantly over the three decades, relative earnings (relative to the comparison group) of new immigrant women fell. For the 1981 cohort of new immigrant women, entry earnings were 68% of those of the comparison group. However, this fell to 52% for the 2010 landing cohort.

This analysis considers primarily the entry earnings of new immigrants. For a broader view of economic outcomes, the unemployment or non-employment outcomes of new immigrants should also be considered. This study touches only briefly on this issue, since it is not central to the questions posed here. Appendix Chart 1 shows that, for new immigrant men,[13] the proportion employed (i.e., with positive earnings) was somewhat lower during the 2000s (at around 83%) than it was during the 1980s (around 91%). The more significant decline was observed among new immigrant women. Their employment rate fell from a peak of 79% during the 1980s to around 65% during the 2000s (Appendix Chart 2). For both men and women, most of the decline in the employment rate occurred during the recession of the early 1990s. This rate did not recover significantly during the economic expansion since 1993. From 1999 to 2007, the employment rate increased by 4 percentage points among new immigrant men and increased by 5 percentage points among new immigrant women.

11. These comparisons represent the actual differences in earnings between new immigrants and the comparison group. Some of the observed differences may be caused by differences between these groups in human capital characteristics, such as work experience or education, which are not adjusted here. The dataset used does not have the information on education for the comparison group.
12. However, if 1981 data were available, a decline between 1981 and 1989 would likely be evident.
13. The employment rate is for the first full year in Canada.

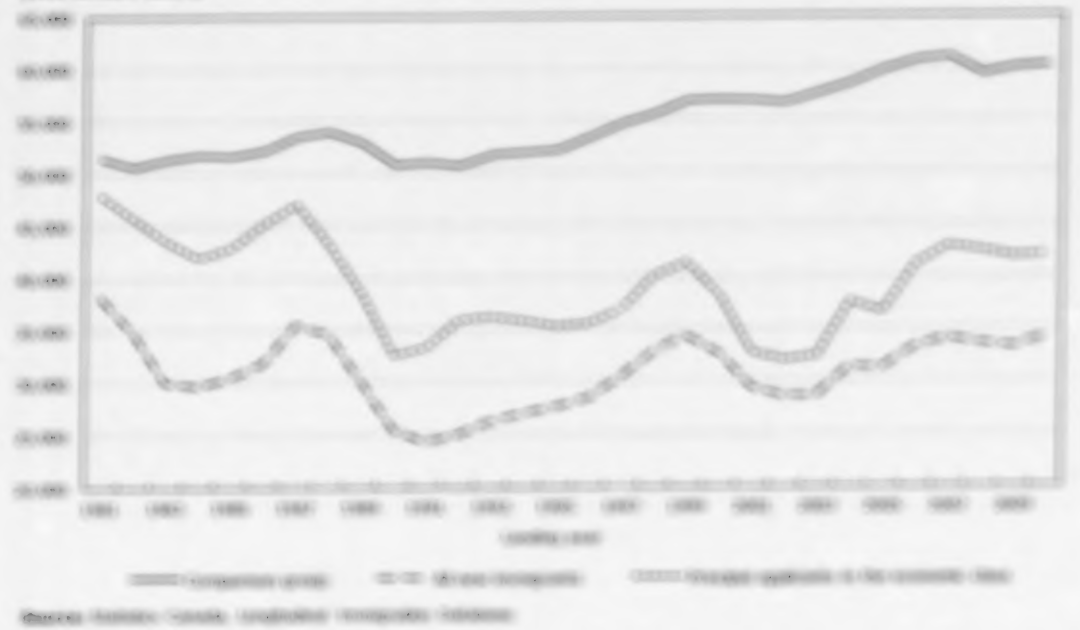
Table 1

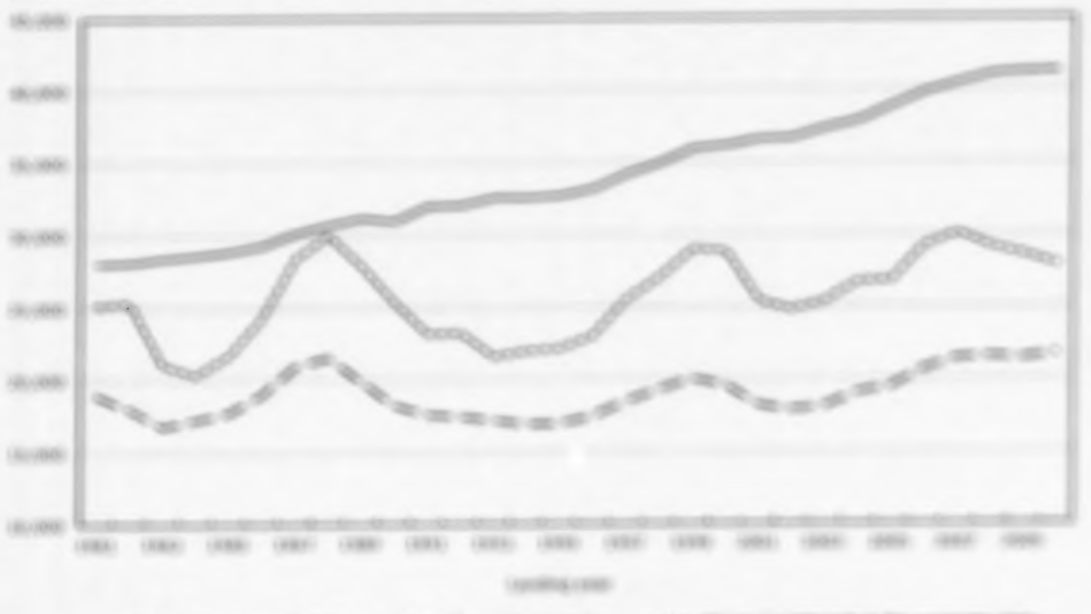
New immigrant entry earnings and entry earnings relative to those of the comparison group, by sex, for selected landing cohorts

	Landing cohort				
	1981	1990	1999	2009	2010
	2011 constant dollars				
Entry earnings					
All new immigrants					
Male	39,200	36,800	34,300	33,800	34,300
Female	18,900	21,000	20,100	20,700	21,800
Principal applicants in the economic class					
Male	47,800	50,100	51,800	51,100	52,100
Female	25,200	30,000	28,000	28,200	27,200
	ratio				
Entry earnings relative to those of the comparison group					
All new immigrants					
Male	0.79	0.68	0.60	0.55	0.57
Female	0.69	0.70	0.68	0.62	0.63
Principal applicants in the economic class					
Male	0.63	0.60	0.70	0.69	0.70
Female	0.60	0.69	0.81	0.71	0.68

Notes: New immigrants include those who were aged 20 to 54 at landing and who had positive earnings in at least one of the first two full years in Canada. Entry earnings are defined as the average annual earnings during the first two full years in Canada (rounded to the nearest $100). For cohort years 1999, 2009, and 2010, the comparison group includes the Canadians—i.e. plus immigrants who have been in Canada for 10 years or more (8 years or more for the 1999 cohort). For the 1981 cohort, the comparison group includes the Canadian-born plus immigrants in Canada for two years or more. Hence, entry earnings as a percentage of the earnings of the comparison group are somewhat overestimated in 1981 compared with other years.

Source: Statistics Canada, Longitudinal Immigration Database.





4.2 Changing immigrant characteristics

4.2.1 During the 1980s

Between the 1981 and 1988 landing cohorts, immigrant characteristics changed significantly. Most of these changes tended to reduce entry earnings, particularly among men. The share of new immigrants from Northern and Western Europe fell from 23.5% to 9.0% for men and from 19.6% to 8.7% for women. Meanwhile, the proportion of immigrants from East Asia (mainly China) increased (Table 2). Related in part to the source-region changes, language abilities in English and French declined. Among new immigrant men, the immigration class composition changed as well. The share of immigrants who were PAs in the economic class decreased, and the presence of refugees increased. All of these changes would tend to put downward pressure on entry earnings.

4.2.2 During the 1990s

Significant changes in immigration selection occurred in the 1990s. The rise in new immigrants' educational attainment was the most significant change in characteristics that was likely to affect entry earnings. This increase was related, at least in part, to the changes in the immigrant selection system in the early 1990s. Among new immigrant men in the study sample, the proportion of those with a university degree rose from 24.2% (for the 1988 cohort) to 52.9% (for the 1999 cohort). Among women, this proportion rose from 17.9% to 42.4%. These changes would tend to increase entry earnings (Table 2).

There were also significant changes in immigration class, which reversed much of the change that occurred during the 1980s. Among men, the share of immigrants in the economic class (including SW PAs, business class PAs, and economic class spouses and dependants) rose from 52.6% (for the 1988 cohort) to 63.2% (for the 1999 cohort) (Table 2). This would tend to increase entry earnings, as economic immigrants earn more than other classes. During the same period, the proportion of refugees declined from 25.4% to 13.0%. A change in economic class was less evident among new immigrant women (Table 2).

The share of new immigrants with some pre-landing Canadian work experience also increased, from 9.3% to 16.3% for men and from 11.1% to 14.6% for women. This would tend to increase entry earnings since pre-landing Canadian work experience is one of the most important predictors of immigrant entry earnings (Bonikowska, Hou and Picot 2015). Other noticeable changes included an increase in the share of immigrants from East Asia and South Asia. For men, this share rose from 26.8% to 44.6%, and, for women, from 31.9% to 42.7%. In the 1990s, the share of immigrants from Europe continued to decline from 28.7% to 22.6% for men between the 1988-to-1999 landing cohorts. These source-region changes would tend to reduce entry earnings, because, on average, immigrants from Europe earn more in the labour market than those from developing countries.

4.2.3 During the 2000s

As noted above, the revisions to the immigration selection policy were more complex during the 2000s, resulting in large changes in the demographic characteristics, work experience, source region and geographic distribution of immigrants entering Canada.

Immigration class was considerably altered. Between the 1999 and 2010 landing cohorts, the share of immigrant men who entered as SW PAs declined from 51.1% to 33.4% (Table 3), while the share of immigrants who entered as PN PAs increased from 0.3% to 12.5%. Previous studies show that PN PAs earn more than their federal skilled worker counterparts during their first few years in Canada. This advantage diminishes after a number of years (Citizenship and Immigration Canada 2010). The share of immigrant men who were economic class spouses also rose,

from 8.8% to 19.2%. This would tend to reduce entry earnings. The proportion of immigrant men with pre-landing Canadian work experience increased from 16.3% to 28.9% (Table 2), and most of this increase consisted of immigrants who had high-paying jobs before landing. This increase was likely related to the fact that provincial nominees are more likely than SWs to be selected by employers and to have previously worked in Canada.

In terms of source-country composition, the proportion of immigrants from Southern and Eastern Europe and East Asia decreased while it increased from Southeast Asia and the Caribbean and Central and South America (Table 2). There was a significant shift away from Toronto as the first destination (the share declined from 44.9% to 30.5% over the period) towards Alberta (the share increased from 7.3% to 14.9%) and Manitoba (1.8% to 6.0%), as well as Montréal (12.4% to 16.0%).

As with men, the immigration class under which women entered changed significantly. The share of all immigrant women entering as provincial nominees rose from 0.1% to about 6.3% between the 1999 and 2010 landing cohorts. The share of those who were live-in caregivers rose significantly (from 5.0% to 11.8%), and the share in the family class declined from 35.1% to 24.5% (Table 3). Interestingly, educational attainment at landing among women rose, unlike among men, where a slight decline was observed (Table 2).

Table 2-1
Changes in entry characteristics of new immigrant men, selected landing years

	Landing year							
	All new immigrants				Principal applicants in the economic class			
	1981	1988	1999	2010	1981	1988	1999	2010
	percent							
Skilled worker and provincial nominee principal applicants[1]	52.3	40.6	51.5	46.6	94.6	90.7	94.8	96.1
Business class principal applicants	3.0	4.2	2.9	1.9	5.4	9.3	5.3	3.9
Economic class spouses and dependants	3.5	7.8	8.8	19.2	...	...	...	...
Family class	25.4	21.2	23.2	20.1	...	...	...	...
Refugees	15.8	25.4	13.0	12.2	...	...	...	...
Others	0.1	1.0	0.7	0.0	...	...	...	...
Aged 20 to 24 at landing	23.0	18.4	9.7	9.3	15.5	8.2	2.8	2.8
Aged 25 to 29 at landing	27.8	24.4	24.4	22.2	27.6	22.1	24.0	22.2
Aged 30 to 34 at landing	21.1	22.6	25.8	24.4	24.9	25.5	29.1	27.3
Aged 35 to 39 at landing	12.0	16.6	19.0	18.9	15.3	21.2	22.1	21.4
Aged 40 to 44 at landing	7.2	9.6	12.0	12.8	9.4	13.5	14.0	13.7
Aged 45 to 49 at landing	4.6	5.1	6.1	8.2	4.9	6.8	6.4	9.0
Aged 50 to 54 at landing	4.3	3.2	3.0	4.2	2.5	2.8	1.7	3.7
Less than high school graduation	18.7	17.6	7.0	8.2	13.0	12.6	1.6	4.4
High school graduation	29.6	32.2	22.4	20.2	24.3	23.6	7.4	8.0
Some postsecondary education	28.7	25.9	17.8	21.7	33.7	30.5	15.0	20.9
Bachelor's degree	16.9	18.6	37.6	32.4	20.2	24.9	52.1	38.3
Graduate degree	6.1	5.6	15.3	17.6	8.8	8.5	24.0	28.4
Northern and Western Europe	23.5	9.0	6.6	7.2	35.7	14.5	8.1	9.2
Southern and Eastern Europe	16.6	19.7	16.0	7.9	11.3	13.1	16.0	8.6
Africa	5.4	7.3	9.4	15.2	6.8	7.0	7.9	17.4
East Asia	11.0	17.7	22.4	11.1	13.7	28.1	31.8	12.9
South Asia	8.3	9.1	22.2	20.6	5.6	7.2	20.0	20.7
Southeast Asia	13.9	13.7	6.3	15.9	5.1	9.2	3.5	14.1
Other Asian countries	3.2	8.2	7.0	7.3	4.2	9.2	6.7	6.9
Caribbean and Central and South America	10.6	12.0	7.7	11.7	9.8	8.5	4.6	7.8
Oceania and other countries	1.7	1.1	0.8	1.4	1.7	0.9	0.4	1.4
United States	5.8	2.3	1.6	1.9	6.2	2.3	1.0	1.0
French mother tongue	1.8	1.0	1.5	1.7	2.4	1.6	1.9	2.3
English or French mother tongue, bilingual	1.9	1.2	1.9	3.9	2.5	1.9	2.7	6.1
Other mother tongue, speaking English	25.6	40.0	55.7	58.0	26.2	52.1	66.0	56.8
Other mother tongue, speaking French	4.3	2.6	4.0	4.3	5.2	2.7	2.9	3.1
Other mother tongue, bilingual	3.1	3.6	4.6	11.2	3.5	5.0	6.1	16.0
Not speaking English or French	32.8	36.4	22.7	11.6	20.8	18.7	12.7	8.3
English mother tongue	30.5	15.3	9.6	9.4	39.4	17.9	7.8	7.4
Regional unemployment rate	8.9	5.8	5.5	6.4	9.0	5.8	5.5	6.3
Over $50,000 a year	...	1.4	2.4	7.8	...	2.4	3.6	13.0
From $20,000 to $50,000 a year	...	3.4	5.4	12.9	...	3.4	4.2	16.5
From $0 to $20,000 a year	...	4.5	8.5	8.2	...	3.3	5.1	7.2
Newfoundland and Labrador	0.3	0.2	0.1	0.3	0.3	0.2	0.1	0.3
Prince Edward Island	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.2
Nova Scotia	1.1	0.7	0.6	0.8	1.2	0.8	0.5	0.8
New Brunswick	0.5	0.3	0.2	0.6	0.6	0.3	0.2	0.8
Quebec (excluding Montréal)	2.1	1.5	1.8	3.3	2.1	1.5	1.7	3.9
Ontario (excluding Toronto)	16.9	15.4	13.9	9.2	18.7	13.3	14.6	7.5
Manitoba	4.2	2.8	1.8	6.0	3.0	1.8	1.6	7.9
Saskatchewan	1.9	0.7	0.7	3.2	1.5	0.6	0.6	4.4
Alberta	14.6	7.5	7.3	14.9	15.4	6.7	6.4	16.0
British Columbia (excluding Vancouver)	4.0	2.2	2.3	2.9	3.8	1.9	1.6	2.6
The territories[2]	0.3	0.3	0.1	0.3	0.3	0.3	0.1	0.3
Montréal	13.2	10.4	12.4	16.0	14.9	11.6	11.3	18.8
Toronto	30.8	46.3	44.9	30.5	28.6	47.9	47.5	25.0
Vancouver	10.2	11.7	13.9	12.0	9.4	13.0	13.7	11.5

... not applicable

1. Provincial Nominee Programs were introduced in the late 1990s.
2. Northwest Territories, Nunavut and Yukon.

Source: Statistics Canada, Longitudinal Immigration Database.

Table 2-2
Changes in entry characteristics of new immigrant women, selected landing years

	Landing year							
	All new immigrants				Principal applicants in the economic class			
	1981	1988	1999	2010	1981	1988	1999	2010
	percent							
Skilled worker and provincial nominee principal applicants[1]	22.6	26.8	24.6	38.6	98.1	97.7	97.5	99.1
Business class principal applicants	0.4	0.6	0.6	0.4	1.9	2.3	2.5	0.9
Economic class spouses and dependants	30.6	27.5	30.2	27.1	...	...	...	...
Family class	32.4	29.4	35.1	24.5	...	...	...	...
Refugees	13.7	14.6	8.9	9.4	...	...	...	...
Others	0.2	1.0	0.6	0.0	...	...	...	...
Aged 20 to 24 at landing	29.0	20.7	16.2	12.5	29.8	11.9	5.2	3.1
Aged 25 to 29 at landing	26.9	24.8	26.8	25.6	32.1	30.1	31.2	26.3
Aged 30 to 34 at landing	18.1	22.6	23.0	23.2	19.0	27.9	29.0	28.0
Aged 35 to 39 at landing	10.3	15.8	16.3	16.6	9.6	17.5	17.8	19.9
Aged 40 to 44 at landing	6.3	8.6	10.0	11.7	5.2	8.1	10.6	12.4
Aged 45 to 49 at landing	4.9	4.4	5.0	6.9	2.8	3.3	4.8	7.4
Aged 50 to 54 at landing	4.5	3.2	2.8	3.5	1.5	1.2	1.5	3.0
Less than high school graduation	26.0	20.1	9.9	7.4	17.7	6.6	1.6	2.0
High school graduation	39.9	36.6	27.3	18.0	37.0	28.8	11.8	4.4
Some postsecondary education	20.4	25.5	20.5	19.6	27.7	40.4	20.9	20.3
Bachelor's degree	11.2	15.1	33.3	41.0	13.6	20.4	49.1	53.9
Graduate degree	2.5	2.8	9.1	14.0	4.0	3.8	16.6	19.4
Northern and Western Europe	19.6	8.7	5.9	5.7	17.6	10.8	9.8	6.0
Southern and Eastern Europe	14.8	16.2	16.3	7.6	5.6	4.1	15.4	6.6
Africa	4.7	5.4	7.1	11.1	5.4	5.7	5.1	8.4
East Asia	13.4	21.4	25.6	13.2	17.1	32.1	28.5	12.4
South Asia	7.2	10.5	17.1	17.3	4.2	4.0	5.8	11.1
Southeast Asia	15.4	15.7	11.1	26.3	14.1	22.5	22.3	43.4
Other Asian countries	2.1	4.4	4.6	4.3	2.3	3.7	3.6	3.1
Caribbean and Central and South America	13.6	13.0	9.3	11.5	26.2	13.3	7.4	7.0
Oceania and other countries	1.6	1.3	0.8	1.2	1.7	1.8	0.7	1.2
United States	7.7	3.5	2.2	1.9	5.8	2.0	1.4	0.7
French mother tongue	1.7	0.7	1.3	1.5	3.7	0.7	2.4	1.4
English or French mother tongue, bilingual	2.1	1.3	1.8	3.1	3.3	2.3	4.4	4.8
Other mother tongue, speaking English	21.3	38.6	46.3	61.7	26.2	62.1	65.0	68.2
Other mother tongue, speaking French	4.9	2.0	3.5	4.2	14.0	1.8	2.3	2.5
Other mother tongue, bilingual	2.5	2.9	3.9	8.9	4.1	4.6	7.0	12.8
Not speaking English or French	36.6	36.9	32.6	12.8	20.3	7.6	8.2	5.4
English mother tongue	31.0	17.6	10.6	7.7	28.4	20.8	10.7	4.9
Regional unemployment rate	8.9	5.7	5.5	6.4	9.3	5.6	5.6	6.4
Over $50,000 a year	...	0.3	0.7	3.3	...	0.7	1.9	6.1
From $20,000 to $50,000 a year	...	2.0	4.2	14.5	...	4.1	11.7	26.5
From $0 to $20,000 a year	...	8.8	9.7	13.5	...	18.5	18.4	18.4
Newfoundland and Labrador	0.3	0.1	0.1	0.2	0.5	0.1	0.1	0.2
Prince Edward Island	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.2
Nova Scotia	0.8	0.6	0.5	0.7	1.1	0.5	0.5	0.6
New Brunswick	0.4	0.2	0.2	0.5	0.3	0.1	0.2	0.3
Quebec (excluding Montréal)	1.4	1.0	1.4	2.6	1.5	0.6	1.8	2.7
Ontario (excluding Toronto)	14.4	13.3	12.8	8.9	9.6	8.0	11.1	6.9
Manitoba	4.1	2.2	1.8	6.0	5.1	1.2	1.4	6.4
Saskatchewan	1.6	0.7	0.8	3.3	1.0	0.3	0.9	3.1
Alberta	17.0	7.8	8.3	15.8	13.1	7.1	8.0	15.5
British Columbia (excluding Vancouver)	4.9	2.3	2.9	3.4	3.8	1.3	2.1	3.0
The territories[2]	0.3	0.2	0.2	0.3	0.3	0.2	0.3	0.4
Montréal	13.4	10.0	11.1	13.8	25.3	9.9	13.4	16.2
Toronto	29.3	48.8	43.5	31.2	27.0	55.9	39.6	30.3
Vancouver	12.0	12.7	16.4	13.2	11.5	14.7	20.8	14.2

... not applicable

1. Provincial Nominee Programs were introduced in the late 1990s.
2. Northwest Territories, Nunavut and Yukon.

Source: Statistics Canada, Longitudinal Immigration Database.

Table 3
Changes in detailed immigration class between the 1999 and 2010 landing cohorts

	All new immigrants		Principal applicants in the economic class	
	1999	2010	1999	2010
	percent			
Men				
Provincial nominee principal applicants	0.3	12.5	0.5	25.8
Live-in caregiver principal applicants	0.1	0.7	0.2	1.5
Skilled worker principal applicants	51.1	33.4	94.1	68.9
Business class principal applicants	2.9	1.9	5.3	3.9
Economic class spouses and dependants	8.8	19.2	...	...
Family class	23.2	20.1	...	...
Refugees	13.0	12.2	...	...
Others	0.7	0.0	...	...
Women				
Provincial nominee principal applicants	0.1	6.3	0.3	16.1
Live-in caregiver principal applicants	5.0	11.8	19.7	30.2
Skilled worker principal applicants	19.6	20.5	77.5	52.7
Business class principal applicants	0.6	0.4	2.5	0.9
Economic class spouses and dependants	30.2	27.1	...	...
Family class	35.1	24.5	...	...
Refugees	8.9	9.4	...	...
Others	0.6	0.0	...	...

... not applicable
Source: Statistics Canada, Longitudinal Immigration Database.

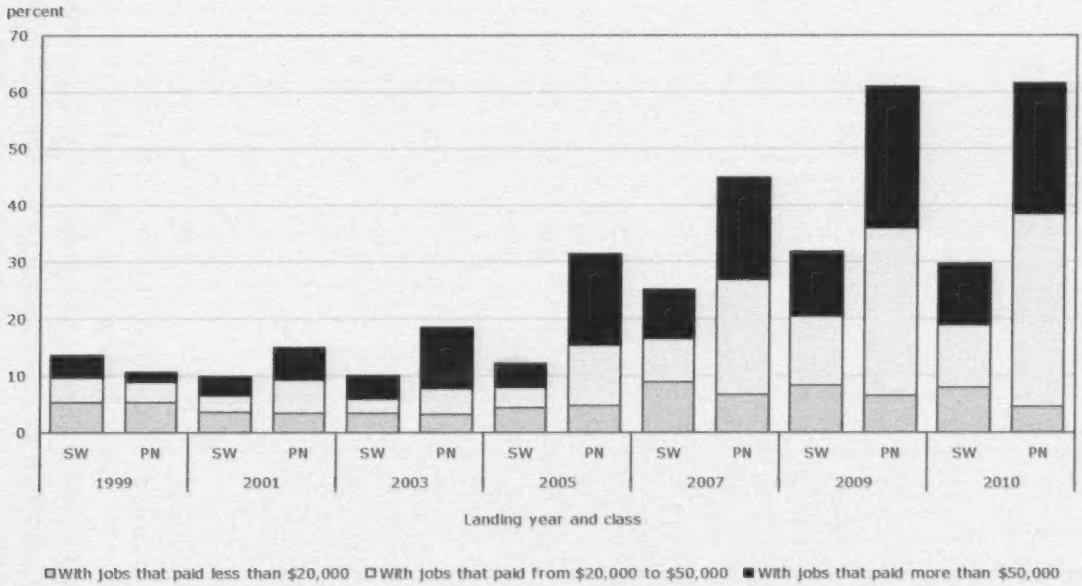
4.2.4 Changing characteristics among principal applicants during the 2000s

For the 2000s, a separate analysis was conducted for PAs, as many of the policy changes were targeted at this group. There were significant changes in their characteristics. Some of the changes are similar to those observed among all new immigrants, particularly in terms of educational attainment, source region and geographic distribution. The economic conditions in the regions and cities that immigrants entered were less favourable at the end of the decade, negatively affecting entry earnings. The weighted average unemployment rate in these destinations was 6.4% in 2011/2012, compared with 5.5% in 2000/2001.

Changes in immigration class were much more pronounced among PAs in the economic class than they were among all immigrants. For example, among men, the share of immigrants entering under the PNP rose from 0.5% to 25.8%, and the share of SWs fell accordingly, from 94.1% to 68.9%, between the 1999 and 2010 landing cohorts. Similar changes were observed among women (Table 3).

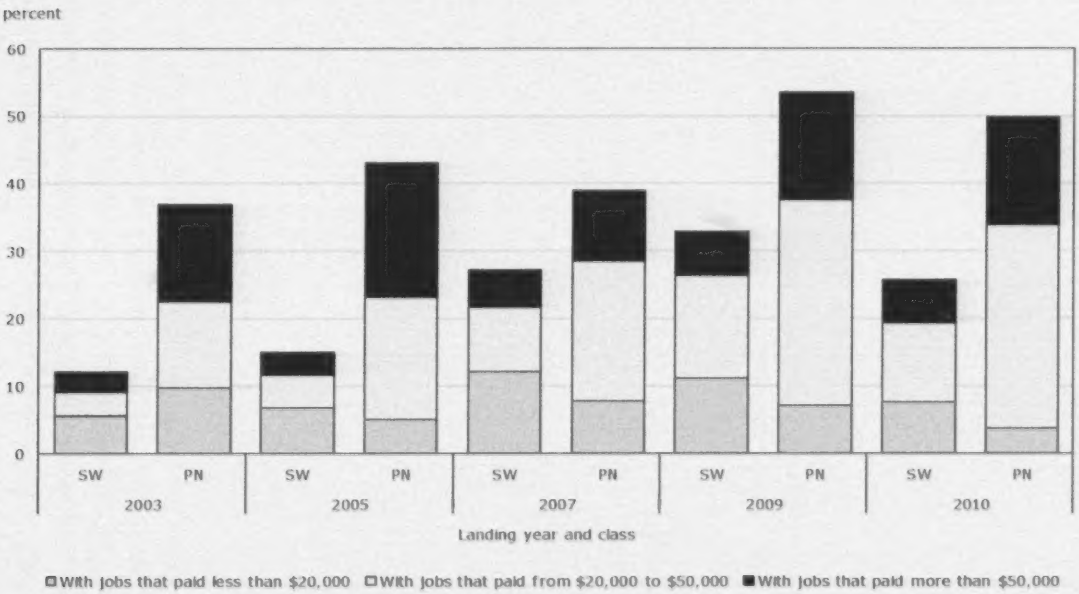
The share of male PAs who had pre-landing Canadian work experience rose from 12.9% among those landing in 1999 to 36.7% among the 2010 landing cohort (32.0% to 51.0% for women) (Table 2). Among men, the share of immigrants with a high-paying job (paying more than $50,000) increased from 3.6% to 13.0%. As noted earlier, this increase was most evident in the PNP, where, for men, the number of PAs with pre-landing Canadian work experience rose from 10.6% to 61.5%, and the share of PAs with high-paying jobs prior to entry rose from 1.8% to 23.2% (Chart 3). Similar but less dramatic changes were observed among female PAs (Chart 4).

Chart 3
Percentage of male principal applicants in the economic class with pre-landing Canadian work experience



Notes: SW: skilled worker; PN: provincial nominee.
Source: Statistics Canada, Longitudinal Immigration Database.

Chart 4
Percentage of female principal applicants in the economic class with pre-landing Canadian work experience



Notes: SW: skilled worker; PN: provincial nominee.
Source: Statistics Canada, Longitudinal Immigration Database.

Table 4
Coefficients on the immigration class and pre-landing Canadian work experience variables, by sex, 2000 to 2012

	Control immigrant class only	Control all except pre-landing Canadian work experience	Add pre-landing Canadian work experience
	Model 1	Model 2	Model 3
		2011 constant dollars	
Men			
Immigration class			
Skilled worker principal applicants (reference)	...	...	...
Provincial nominee principal applicants	12,100	13,900	0
Live-in caregiver principal applicants	-5,800	-4,900	-6,700
Business class principal applicants	-16,900	-8,800	-5,500
Economic class spouses and dependants	-12,800	-8,400	-5,800
Family class	-9,800	-8,300	-5,300
Refugees	-14,600	-8,900	-9,600
Others	-10,200	-5,600	-15,400
Pre-landing Canadian work experience			
Annual earnings over $50,000	...	...	71,800
Annual earnings from $20,000 to $50,000	...	...	9,900
Annual earnings under $20,000	...	...	800
No pre-landing Canadian work experience (reference)	...	...	...
Women			
Immigration class			
Skilled worker principal applicants (reference)	...	...	...
Provincial nominee principal applicants	10,000	10,500	1,100
Live-in caregiver principal applicants	-3,900	-3,900	-8,700
Business class principal applicants	-13,000	-7,900	-5,500
Economic class spouses and dependants	-10,700	-8,300	-6,600
Family class	-11,000	-8,100	-6,100
Refugees	-12,000	-7,800	-7,700
Others	-8,500	-4,400	-8,400
Pre-landing Canadian work experience			
Annual earnings over $50,000	...	...	61,700
Annual earnings from $20,000 to $50,000	...	...	11,000
Annual earnings under $20,000	...	...	3,500
No pre-landing Canadian work experience (reference)	...	...	...

... not applicable

Note: All numbers are rounded to the nearest $100.

Source: Statistics Canada, Longitudinal Immigration Database.

4.3 The effect of changes in immigrant selection on entry earnings during the 2000s

Given the significant changes in immigration class composition, the analysis in this section will first examine the overall effect of changes in immigration class on the entry earnings trend. It will further examine whether changes in immigrant characteristics, particularly pre-landing Canadian work experience, account for the effect of changes in immigration class and whether they contribute to the entry earnings trends.

4.3.1 The role of the Provincial Nominee Program and pre-landing Canadian work experience in increasing the entry earnings of immigrant men

The role that changing immigration class composition plays is examined by running the three models and the related decompositions outlined in the "Data and methods" section (Section 3). The coefficients for the regression models, using both log annual earnings and annual earnings as the dependent variable, are shown in Appendix Table 1. The results reported in the paper use annual earnings as the dependent variable. Since the focus is on the role of immigration class and pre-landing Canadian work experience, the coefficients for these two factors are shown in Table 4. In Model 1, the PN PAs' entry earnings were, on average, $12,100 more than the SW PAs' entry earnings during the 2000s. This is the difference in actual, unadjusted average entry earnings over all landing cohorts between 1999 and 2010. Earlier work also found entry earnings to be higher among provincial nominees than among federal skilled workers (Pandey and Townsend 2013). In Model 2, after controlling for all other variables[14] except pre-landing Canadian work experience, this difference increased marginally to $13,900.[15]

However, a large change occurs with Model 3, when pre-landing Canadian work experience is added. The difference in entry earnings between the PN PAs and the SW PAs goes from $13,900 in Model 2 to $0 in Model 3. Virtually all the difference in entry earnings can be attributed to the fact that, during the 2000s, the share of new PAs with pre-landing Canadian work experience was much higher among provincial nominees than it was among SWs. Among the 2010 landing cohort, 61.5% of PN PAs had some pre-landing Canadian work experience, compared with 29.5% of SWs (Chart 3). Perhaps more importantly, a much higher percentage had experience in high-paying jobs. Among male PN PAs, 23.2% had pre-landing Canadian work experience in a job that paid more than $50,000, compared with 10.7% of SW PAs. Only 4.5% of the PNs had a job that paid less than $20,000, compared with 7.8% of SWs. Therefore, the main reason for the higher entry earnings among PN PAs compared with SW PAs in the 2000s was the larger share of PN PAs that had high-paying jobs in Canada before landing. Other differences, such as the region in which the immigrants were working (and the shift to the West), mattered much less.

Detailed decomposition further quantifies the contribution of the immigration class and pre-landing Canadian work experience to the trends in entry earnings. The decomposition was conducted for each of the three models, and focused on the change that occurs from 2000/2001 (the 1999 landing cohort) to 2011/2012 (the 2010 landing cohort). In the Model 1 decomposition, the change in the immigration class variable (the only independent variable) tends to increase immigrant earnings by about $800 (i.e., 100% of the change associated with the compositional changes) (Table 5). In Model 2, with all control variables except pre-landing Canadian work experience added, the change in the immigration class accounts for an even larger change in immigrant entry earnings—around $1,200 (i.e., 59% of $2,100).

In Model 3, after the pre-landing Canadian work experience variable is added, changes in immigration class have a small negative effect, if any, on entry earnings (Table 5). The pre-landing Canadian work experience becomes dominant, accounting for 92% of the $5,000 rise in entry earnings associated with changes in all of the variables. These results were replicated using the log of annual earnings (rather than annual earnings) as the dependent variable, and are shown

14. These other variables include age at landing, educational attainment at landing, source region, language, destination region or city in Canada, and the unemployment rate among prime-age workers in the destination region or city in Canada.
15. This increase occurs, in part, because the educational attainment among PN PAs was lower than that among SW PAs. This tends to bring down provincial nominees' entry earnings relative to those of SWs in the actual (unadjusted) data. Hence, after adjusting for this difference, the earnings difference between the two classes becomes larger. In other words, if the PNP and SW PAs had had the same educational attainment, age, source region, and language background, and if they had settled in regions with similar unemployment rates, the difference would have been $13,900.

in Appendix Table 2. The key findings remain the same.[16] Hence, virtually all of the positive effect that changes in the immigration class had on entry earnings was associated with a rise in the share of immigrants who had pre-landing Canadian work experience in relatively high-paying jobs. And, as noted earlier, this increase was most evident in the PNP.

Other variables that had a significant effect on entry earnings included the shift in source regions, which tended to increase entry earnings, and the fact that economic conditions were worse (as measured by the unemployment rate) in 2011/2012 than in 2000/2001 in the regions and cities in which immigrants settled. The weighted average unemployment rate in the settlement regions and cities rose from 5.5% to 6.4% between 2000/2001 and 2011/2012.

To summarize, there was no change in the entry earnings among immigrant men between the 1999 and 2010 cohorts, yet the changes in immigrant characteristics—including demographic characteristics, source region, geographic distribution and pre-landing Canadian work experience—tended to increase entry earnings by $5,000. Of the changes, the rise in the share of landed immigrants with pre-landing Canadian work experience accounted for most of the effect. Many immigrants with pre-landing Canadian work experience would have been temporary foreign workers, and earlier research suggests that they outperform skilled immigrants without any pre-landing Canadian work experience (Hou and Bonikowska 2015; Sweetman and Warman 2014). Pre-landing Canadian work experience also largely explains why PN entry earnings were higher than those of the SW immigrants throughout the 2000s.

4.3.2 Results for new immigrant women during the 2000s

As with men, an analysis of the regression coefficients in the three models indicates that the pre-landing Canadian work experience variable accounted for virtually all of the higher entry earnings among new immigrant women entering through the PNP during the 2000s, in comparison with SWs. In the regressions, the coefficient on the PNP was around $10,000 in both Models 1 and 2 (Table 4). This means that immigrant women entering via the PNP had entry earnings of about $10,000 more than SWs—whether controlling for differences in characteristics (Model 2, except for pre-landing Canadian work experience) or not (Model 1). But when pre-landing Canadian work experience is added in Model 3, female PN PAs earn only about $1,100 more than SWs. Thus, almost all the difference in entry earnings between the two classes can be attributed to the difference in the share of immigrants with pre-landing Canadian work experience, particularly in high-paying jobs. For landing year 2010, 49.7% of new female PN PAs in the study sample had some pre-landing Canadian work experience, whereas only 25.6% of the SW immigrants did. Furthermore, 15.8% of new female PN PAs had a job that paid more than $50,000 prior to landing, compared with 6.3% of SW immigrants (Chart 4).

Decomposition analysis shows that the change in pre-landing Canadian work experience was the most significant factor influencing entry earnings among immigrant women, like it was for men. Average entry earnings increased by $1,700 for women between the 1999 and 2010 landing cohorts. When controlling for all independent variables except pre-landing Canadian work experience (see Model 2 in Table 5), changes in these control variables tended to raise entry earnings by $2,800, with changing immigration class accounting for the majority of the increase (54%). However, when the pre-landing Canadian work experience variable is added (Model 3), it dominates all others, accounting for 66% of the $4,300 change in earnings associated with

16. Just as with the decomposition based on annual earnings, immigration class is seen to account for none of the positive change in log annual earnings attributed to all variables once Canadian work history is added (Model 3, Appendix Table 2). Pre-landing Canadian work experience is the dominant variable, whether log earnings or earnings are used as the dependent variable. For men, the share of the total change caused by characteristics accounted for by the Canadian work history variable is 101% using log earnings, and 92% using annual earnings. For women, the numbers are 59% and 66%. In the decomposition based on log earnings, source region and the regional unemployment rates are seen to be somewhat more important than when annual earnings are used. However, they are swamped by the Canadian work history variable.

changes in characteristics. Most significantly, the contribution of changes in immigration class becomes quite small (falling to 8%), implying that most of the positive effect of immigration class on entry earnings between 2000/2001 and 2011/2012 came through pre-landing Canadian work experience.

4.3.3 Change in entry earnings among principal applicants in the economic class during the 2000s

The majority of the changes to immigration policy during the 2000s were directed at PAs in the economic class—those who were largely selected based on the points system. In this study, PAs in the economic class include those who entered as provincial nominees, live-in caregivers, business class immigrants, and SWs, or through the Canadian Experience Class.[17] Again, the analysis starts with men who landed between the ages of 25 and 54 and were employed at some time during their first two full years in Canada.

Entry earnings of male PAs in the economic class fell dramatically during the early 2000s, declining from an average of $41,300 for the 1999 cohort to $32,100 for the 2002 cohort (Chart 1). This decline was related, in part, to the high-tech bust of the period and the fact that a large proportion of PAs in the economic class were in computer science or engineering occupations (Picot and Hou 2009). Earnings recovered to $41,100 for the 2006 cohort and remained at roughly that level up to the 2010 cohort.

Actual average entry earnings for male PAs changed little between the 1999 and 2010 landing cohorts (they increased by $700). The decomposition suggests that changes to all control variables (Model 3) over the 11 years tended to increase entry earnings by $8,900 (Table 5, right column). In particular, the rising share of PAs with pre-landing Canadian work experience accounted for the majority (94%) of this increase associated with changing composition.[18] Changing source region also contributed positively to entry earnings (21% of the accounted-for increase). Meanwhile, lower levels of educational attainment and increased settlement in regions or cities with higher unemployment rates by the 2010 landing cohort tended to reduce entry earnings (Table 5, right column).

Pre-landing Canadian work experience also explained the entry earnings advantage that the PN PAs held over their SW counterparts during the 2000s. With all the independent variables (except pre-landing Canadian work experience) in the regression, a male PN PA earned $3,900 more than his SW PA counterpart. When the pre-landing Canadian work experience variable is added, this falls to $0. All the difference in entry earnings between PN PAs and SW PAs is accounted for by differences in pre-landing Canadian work experience.

The results for female PAs are very similar. Actual entry earnings decreased marginally (by $1,100) during the 2000s, but changes in immigrant characteristics tended to drive up entry earnings by $3,800. And, the increase in the share of immigrants with pre-landing Canadian work experience was responsible in large part for this rise in earnings associated with all factors included in this analysis (Table 5). These factors also explain the contribution that changing immigration class (i.e., the rise of the PNP) made to rising entry earnings (Table 5), and why female PN PAs had higher entry earnings than SW PAs during the 2000s.[19]

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17. The Canadian Experience Class did not exist until the late 2000s and is still very small. These immigrants are included in the SW program data.
18. Similar results are observed when the log annual earnings are used as the dependent variable, rather than annual earnings (Appendix Table 2).
19. The coefficient on the PNP variable (i.e., the difference in entry earnings between the female PN PAs and SW PAs) went from $12,200 in Model 2 (with all independent variables except pre-landing Canadian work experience) to $300 after the work experience variable was added in Model 3.

Table 6
Changes in entry earnings and contributing factors between the 1999 and 2010 landing cohorts, by sex

	All new immigrants			Principal applicants in the economic class		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
	2011 constant dollars					
Men						
Total change	0	0	0	700	700	700
Changes caused by changes in characteristics	800	2,100	5,000	3,000	3,900	8,900
	proportion					
Contributing factors						
Age at landing	...	0.01	-0.01	...	0.03	0.01
Immigration class	1.00	0.59	-0.05	1.00	0.94	-0.02
Educational attainment at landing	...	0.00	-0.01	...	-0.17	-0.06
Source region	...	0.66	0.23	...	0.60	0.21
Language	...	0.02	0.03	...	-0.16	0.01
Geographic distribution	...	-0.09	0.02	...	-0.22	-0.01
Regional unemployment rate	...	-0.19	-0.14	...	-0.02	-0.07
Pre-landing Canadian work experience	...	...	0.92	...	...	0.94
	2011 constant dollars					
Women						
Total change	1,700	1,700	1,700	-1,100	-1,100	-1,100
Changes caused by changes in characteristics	1,900	2,800	4,300	1,400	1,900	3,800
	proportion					
Contributing factors						
Age at landing	...	0.00	-0.01	...	-0.07	-0.02
Immigration class	1.00	0.54	0.08	1.00	1.53	-0.17
Educational attainment at landing	...	0.25	0.13	...	0.58	0.12
Source region	...	0.20	0.14	...	0.02	0.19
Language	...	0.13	0.07	...	-0.49	-0.07
Geographic distribution	...	-0.05	-0.01	...	-0.40	-0.01
Regional unemployment rate	...	-0.07	-0.06	...	-0.19	-0.10
Pre-landing Canadian work experience			0.66			1.06

... not applicable

Notes: Model 1 adjusts for immigration class. Model 2 adjusts for immigration class plus demographic characteristics and regional unemployment rate. Model 3 adjusts for immigration class plus demographic characteristics and regional unemployment rate as well as pre-landing Canadian work experience. Total change and change caused by changes in characteristics are rounded to the nearest $100.

Source: Statistics Canada, Longitudinal Immigration Database.

4.4 The effect of changes in immigrant selection on entry earnings during the 1990s

The 1990s differed from the 2000s in terms of changes to immigrant selection and immigrant characteristics. The significant changes in the 1990s included large increases in the share of SW immigrants and in educational attainment at landing. Between the approximate business cycle peaks of 1989/1990 (the 1988 landing cohort) and 2000/2001, the actual entry earnings of immigrant men remained constant at $34,500. But changing characteristics tended to increase their entry earnings by $3,500 (Table 6). Rising educational attainment at landing of immigrants was by far the most significant factor putting upward pressure on entry earnings, accounting for 69% of the accounted-for rise in earnings. This factor tended to increase average entry earnings

by $2,400 (69% times $3,500). Changing immigration class (a rising share of immigrants in the economic class) and the rising share of immigrants with pre-landing Canadian work experience also tended to increase entry earnings, by $1,100 and $700 respectively. But there were changes that offset part of these gains, notably changing source regions, which tended to reduce entry earnings by $700. Results were similar when log annual earnings were used as the dependent variable, rather than annual earnings.[20]

Changing characteristics had less effect on the entry earnings of immigrant women during the 1990s; they improved average entry earnings by only $1,200, compared with $3,500 for men. The factors influencing entry earnings were the same for women as for men, except for changing immigration class, which had virtually no effect among women. As with men, rising educational attainment at landing was the dominant factor pushing up women's entry earnings,[21] followed by an increase in the share of women with pre-landing Canadian work experience. These increases were partially offset by declining earnings related to changing source regions and changing language (Table 6).

A similar decomposition analysis was conducted for PAs in the economic class (Table 6). Qualitatively, the results were similar. Rising educational attainment at landing was the main factor putting upward pressure on entry earnings, along with the rising share of PAs in the economic class who had pre-landing Canadian work experience. These gains were partially offset by losses related to changing source regions and language and, for women, changes in destination cities or regions (Table 6). Immigration class changes did not play much of a role, since among PAs in the economic class there were only minor changes in the distribution of the business class and federal SWs within this major class during the 1990s.

4.5 The effect of changes in immigrant selection on entry earnings during the 1980s

Compositional changes during the 1980s, described earlier, tended to decrease, not increase, entry earnings, particularly among men. Model 3 could not be run for this period, since the data to determine pre-landing Canadian work experience were not available. The results reported here are based on Model 2, which includes all of the explanatory variables except pre-landing Canadian work experience.

There are three major points. First, among men, the changes in source region, language ability, immigration class and age (a proxy for foreign work experience) accounted for the entire decline of $3,600 in entry earnings among men between the 1981 and 1988 landing cohorts[22] (Table 6). Not surprisingly, changing source region was the most significant factor, followed by immigration class and language. Second, entry earnings did not decline among new immigrant women over this period; they actually rose by about $2,600 (Table 6). This observation is not generally known, but it is consistent with earlier research (Hou 2013). Using census data, Frenette and Morissette (2005) also observed an increase during the 1980s in women's entry earnings, defined as average earnings in the first five years after immigration. Third, the included explanatory variables

20. When log annual earnings were used as the dependent variable, educational attainment at landing and immigration class contributed the most to the earnings change. However, their order was reversed; immigration class accounted for 56% of the total 'explained' change in log earnings, and education for 49% (Appendix Table 3).
21. Results are similar when log annual earnings, rather than annual earnings, are used as the dependent variable. Educational attainment at landing proved to be the most important of all the other variables (Appendix Table 3).
22. When log annual earnings, rather than annual earnings, are used as the dependent variable, the results are similar but more accentuated. Changes in three variables—source region, immigration class and language—had the largest negative effect on entry earnings. Together, they accounted for much more than the total decline in log entry earnings over the period. This was offset to some extent by the positive effects of changing regional unemployment rates, geographic distribution of new immigrants and age (Appendix Table 3).

accounted for little—only $500—of the $2,600 increase in women's entry earnings over the period (Table 6). Other unknown factors were driving up women's entry earnings in spite of the shift in source regions and language skills, which would have had a negative effect on entry earnings for both men and women.

Table 6
Changes in entry earnings and contributing factors between the 1981 and 1983 landing cohorts and between the 1988 and 1990 landing cohorts

	Between 1981 and 1983 landing cohorts		Between 1988 and 1990 landing cohorts	
	All new immigrants	Principal applicants in the economic class	All new immigrants	Principal applicants in the economic class
	2011 constant dollars			
Men				
Total change	-3,600	-6,700	-200	-1,700
Changes caused by changes in characteristics	-3,700	-6,800	3,500	3,500
	proportion			
Contributing factors				
Age at landing	-0.16	-0.40	0.03	0.03
Immigration class	0.41	0.17	0.09	0.09
Educational attainment at landing	-0.01	-0.14	0.86	1.21
Source region	0.68	1.24	-0.21	-0.46
Language	0.37	0.43	-0.10	-0.26
Geographic distribution	-0.18	-0.13	-0.02	0.02
Regional unemployment rate	-0.38	-0.17	0.06	0.10
Pre-landing Canadian work experience	..	..	0.22	0.24
	2011 constant dollars			
Women				
Total change	2,600	4,800	-1,500	-1,000
Changes caused by changes in characteristics	500	2,400	1,200	2,700
	proportion			
Contributing factors				
Age at landing	0.32	0.24	0.02	0.09
Immigration class	0.07	-0.01	-0.06	-0.07
Educational attainment at landing	0.79	0.49	1.15	1.10
Source region	-0.04	0.08	-0.24	-0.07
Language	-1.01	0.10	-0.15	-0.15
Geographic distribution	1.77	0.79	0.10	0.19
Regional unemployment rate	-0.91	-0.69	0.08	0.09
Pre-landing Canadian work experience	..	..	0.32	0.32

.. not applicable

Note: Total change and changes caused by changes in characteristics are rounded to the nearest $100.
Source: Statistics Canada, Longitudinal Immigration Database.

6 Conclusion and discussion

Among new immigrants, abstracting from economic cyclical variation, earnings immediately after landing remained more or less constant throughout the 1980s and 2000s. There were some minor improvements in the late 2000s. The trend for landing principal applicants (PAs) in the economic class was very similar. However, despite this apparent stability, during the 2000s in particular, there were significant pressures on earnings—primarily positive—related to changing immigrant selection and characteristics. During the 1990s, rising educational attainment at landing and the increasing share of immigrants in the economic class increased entry earnings. During the 2000s, a much more complex period in terms of immigrant selection, the factors that positively influenced immigrant entry earnings included changes in the distribution by immigration class, notably the rise of the Provincial Nominee Program (PNP), changing source region, and, for immigrant women, rising educational attainment at landing. The PNP effect was primarily reflecting a rise in the share of immigrants with pre-landing Canadian work experience. These positive effects were offset by some negative pressures related to less favourable economic conditions in destination cities and regions in 2011/2012 than in 2000/2001.

The following discussion might assist in interpreting these earnings pressures. In this analysis, the effect of any characteristic on entry earnings—say, a rising share of immigrants with a bachelor's degree—assumes that the earnings value of a bachelor's degree[23] for a new immigrant remained constant at the average value observed over a given study period (e.g., the 2000s). Increasing the share of immigrants with a degree would put upward pressure on entry earnings, since a degree holder has higher earnings than, say, a new immigrant with a high-school education.

Despite the overall upward pressure that changing characteristics put on entry earnings (holding the earnings value of any characteristic constant), entry earnings did not in fact rise over the two decades. That means that one of two things may have been happening. There may have been downward pressure on entry earnings in general for reasons not included in this research, such as an increase in the supply of immigrants (Hou and Picot 2014), a general deterioration in earnings in labour-market entry jobs (Green and Worswick 2010) and other possible reasons (Reitz 2007). Or, more specific events, rather than general events, may have been occurring. Notably, the earnings potential associated with some specific characteristics (such as a university degree, a particular source region, pre-landing Canadian work experience, or particular language skills) may have declined. Entry earnings would have risen had one of these possibilities not occurred. Assessing what exactly was occurring is left for future research.

One factor was more important than all others during the 2000s. The rise in the share of new immigrants who had pre-landing Canadian work experience, often in high-paying jobs, tended to put far more upward pressure on entry earnings than any other variable studied. The increase in pre-landing Canadian work experience accounted for most of the positive effect of the rise of the PNP on entry earnings during the 2000s, since it was heavily concentrated among provincial nominees. Furthermore, differences in pre-landing Canadian work experience between provincial nominees (with more Canadian work experience) and SWs (with less) accounted for virtually all of the entry earnings advantage that the provincial nominees held over SW immigrants during the 2000s. While other factors, such as differences in geographic distribution (more in the West), educational attainment at landing, unemployment in the destination regions and cities, and source region, contributed, either in a small positive or negative manner, to the entry earnings differences between provincial nominees and SWs, their contribution paled in comparison with the pre-landing Canadian work experience factor. Once differences in pre-landing Canadian work

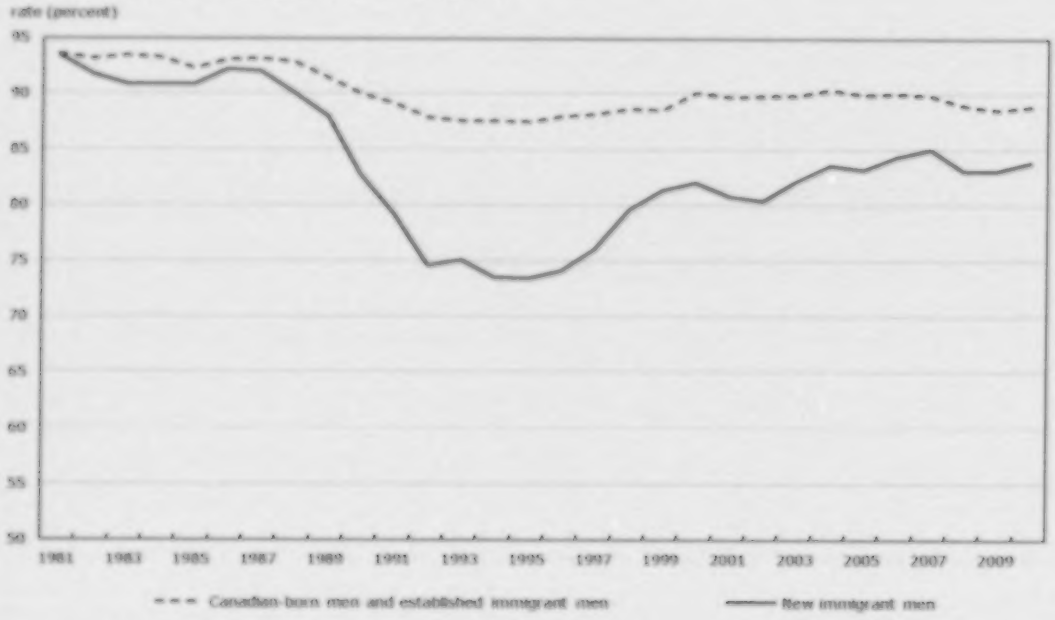
23. This analysis controls for source region, age, work experience, destination and so on. In other words, in this analysis, the earnings potential of a university degree would not be affected by a shift in source regions towards those with less economically valuable degrees or by a shift towards degree holders with less pre-landing Canadian work experience, because these factors and other factors are controlled for.

experience were taken into account, entry earnings were virtually identical between provincial nominees and SWs. These conclusions apply to all new immigrants, as well as to PAs in the economic class, and are evident for both men and women.

It is likely that the pre-landing Canadian work experience variable used here captures at least three effects. First is the possible effect of pre-landing Canadian work experience on earnings early in immigrants' working life after landing. Employers may be willing to remunerate such experience, in contrast to foreign work experience, which receives little remuneration. But all, or perhaps most, of the effect associated with this variable is not likely related to the remuneration of Canadian work experience. Second, this variable may also reflect a selection effect (Hao 2013; Hou and Bonikowska 2015; Sweetman and Warman 2014). When immigrants are selected from the pool of temporary foreign workers, they come with information regarding how well they performed in their jobs in Canada. If an employer seeks to change the status of temporary foreign workers to a permanent one, it is likely because they have done well in their jobs. Hence, much of the effect on entry earnings could be because of this selection process. Third, during the 2000s, many of the workers on temporary visas who attained permanent status worked in high-paying jobs. If one increases the share of PAs who are in high-paying jobs, then, naturally, average entry earnings will rise. Whether this trend will continue in the future is unknown. If the PAs whose status changes from temporary foreign worker to permanent resident are in increasingly lower-paying, lower-skilled jobs, then entry earnings may fall, despite the PAs having pre-landing Canadian work experience.

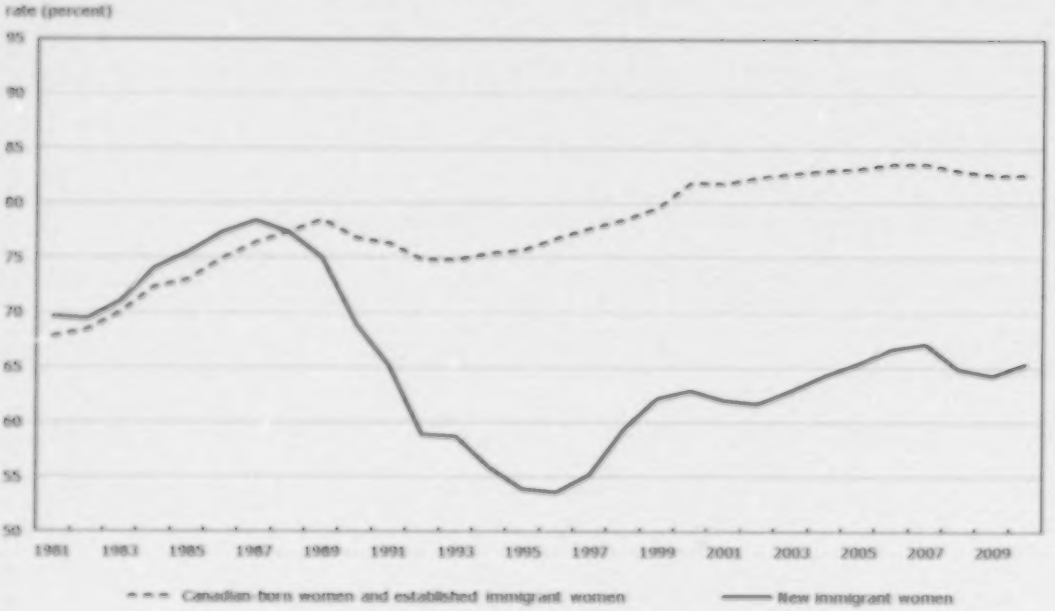
6 Appendix tables and charts

Appendix Chart 1
Employment rates among men aged 25 to 54



Source: Statistics Canada, Longitudinal Immigration Database.

Appendix Chart 2
Employment rates among women aged 25 to 54



Source: Statistics Canada, Longitudinal Immigration Database.

Appendix Table 1-1
Regression models predicting entry earnings of new immigrant men who landed in Canada between 1999 and 2010

	Annual earnings (in 2011 constant dollars) as the outcome				Log annual earnings as the outcome			
	Model 1		Model 3		Model 1		Model 3	
	estimate	standard error	estimate	standard error	estimate	standard error	estimate	standard error
Intercept	39,349	105	58,418	319	10.098	0.003	10.423	0.011
Landing year (reference: 2010)								
1999	815	152	5,089	135	0.008	0.005	0.076	0.005
2000	-1,274	144	3,975	124	-0.050	0.005	0.064	0.004
2001	4,696	141	650	122	-0.163	0.004	-0.037	0.004
2002	-5,240	146	-409	126	-0.178	0.005	-0.065	0.004
2003	-4,386	147	22	127	-0.150	0.005	-0.048	0.004
2004	-1,510	144	953	127	-0.078	0.005	-0.035	0.004
2005	-1,420	139	1,245	125	-0.048	0.004	-0.014	0.004
2006	601	141	2,099	126	0.013	0.004	0.022	0.004
2007	1,059	143	2,646	122	0.003	0.005	0.052	0.004
2008	109	142	1,496	127	-0.042	0.004	0.035	0.004
2009	-691	140	-384	120	-0.041	0.004	-0.010	0.004
Immigration class (reference: skilled worker principal applicants)								
Provincial nominee principal applicants	12,082	148	27	150	0.396	0.005	-0.006	0.005
Live-in caregiver principal applicants	-5,762	579	-6,654	503	0.184	0.018	-0.222	0.017
Business class principal applicants	-16,870	213	-5,500	192	-0.528	0.007	-0.164	0.007
Economic class spouses and dependants	-12,787	97	-5,774	89	-0.317	0.003	-0.213	0.003
Family class	-9,836	79	-5,287	82	-0.118	0.002	-0.089	0.003
Refugees	-14,574	92	-9,606	98	-0.358	0.003	-0.306	0.003
Others	-10,159	870	-15,436	744	-0.203	0.027	-0.403	0.025
Age at landing (reference: 50 to 54)								
20 to 24	...	...	682	155	...	...	0.126	0.005
25 to 29	...	...	2,100	144	...	...	0.276	0.005
30 to 34	...	...	2,204	143	...	...	0.261	0.005
35 to 39	...	...	2,112	146	...	...	0.214	0.005
40 to 44	...	...	1,955	151	...	...	0.167	0.005
45 to 49	...	...	1,326	161	...	...	0.100	0.006
Educational attainment at landing (reference: graduate degree)								
Less than high school graduation	...	...	-8,339	126	...	...	-0.097	0.004
High school graduation	...	...	-9,115	99	...	...	-0.124	0.003
Some postsecondary education	...	...	-8,897	95	...	...	-0.090	0.003
Bachelor's degree	...	...	-3,783	79	...	...	-0.033	0.003
Source region (reference: the United States)								
Northern and Western Europe	...	...	-403	220	...	...	0.134	0.008
Southern and Eastern Europe	...	...	-12,029	230	...	...	-0.091	0.008
Africa	...	...	-12,112	223	...	...	-0.235	0.008
East Asia	...	...	-19,802	231	...	...	-0.468	0.008
South Asia	...	...	-14,462	223	...	...	-0.157	0.008
Southeast Asia	...	...	-11,100	234	...	...	0.080	0.008
Other Asian countries	...	...	-16,763	237	...	...	-0.392	0.008
Caribbean and Central and South America	...	...	-11,004	219	...	...	-0.093	0.007
Oceania and other countries	...	...	-4,751	308	...	...	0.075	0.011

... not applicable

Note: Model 3 also controls for geographic distribution across provinces and major metropolitan areas.

Source: Statistics Canada, Longitudinal Immigration Database.

Appendix Table 1-2
Regression models predicting entry earnings of new immigrant men who landed in Canada between 1999 and 2010

	Annual earnings (in 2011 constant dollars) as the outcome				Log annual earnings as the outcome			
	Model 1		Model 3		Model 1		Model 3	
	estimate	standard error	estimate	standard error	estimate	standard error	estimate	standard error
Language (reference: English mother tongue)								
French mother tongue	...	...	-10,048	269	...	...	-0.098	0.009
English or French mother tongue, bilingual	...	...	-4,637	189	...	...	0.040	0.006
Other mother tongue, speaking English	...	...	-6,408	118	...	...	-0.148	0.004
Other mother tongue, speaking French	...	...	-9,786	186	...	...	-0.296	0.006
Other mother tongue, bilingual	...	...	-7,164	150	...	...	-0.157	0.005
Not speaking English or French	...	...	-8,114	133	...	...	-0.245	0.005
Regional unemployment rate	...	...	-776	31	...	...	-0.045	0.001
Pre-landing Canadian work experience (reference: no pre-landing Canadian work experience)								
Over $50,000 a year	...	...	71,759	135	...	...	1.224	0.005
From $20,000 to $50,000 a year	...	...	9,922	102	...	...	0.428	0.003
From $0 to $20,000 a year	...	...	805	101	...	...	0.037	0.003

... not applicable

Note: Model 3 also controls for geographic distribution across provinces and major metropolitan areas.

Source: Statistics Canada, Longitudinal Immigration Database.

Appendix Table 2
Changes in log entry earnings and contributing factors between the 1999 and 2010 landing cohorts, by sex

	All new immigrants		Principal applicants in the economic class	
	Controlling for immigration class only	Controlling for all covariates	Controlling for immigration class only	Controlling for all covariates
	Model 1	Model 3	Model 1	Model 3
		log points		
Men				
Total change	0.022	0.022	0.033	0.033
Changes caused by changes in characteristics	0.030	0.098	0.109	0.163
		proportion		
Contributing factors				
Age at landing	...	-0.07	...	-0.05
Immigration class	1.00	-0.15	1.00	0.00
Educational attainment at landing	...	0.00	...	-0.03
Source region	...	0.54	...	0.43
Language	...	0.13	...	0.05
Geographic distribution	...	-0.05	...	-0.16
Regional unemployment rate	...	-0.41	...	-0.22
Pre-landing Canadian work experience	...	1.01	...	0.98
		log points		
Women				
Total change	0.094	0.094	-0.037	-0.037
Changes caused by changes in characteristics	0.097	0.189	0.093	0.137
		proportion		
Contributing factors				
Age at landing	...	-0.02	...	-0.08
Immigration class	1.00	0.09	1.00	-0.20
Educational attainment at landing	...	0.08	...	0.09
Source region	...	0.26	...	0.52
Language	...	0.13	...	-0.05
Geographic distribution	...	-0.02	...	-0.02
Regional unemployment rate	...	-0.12	...	-0.17
Pre-landing Canadian work experience	...	0.59	...	0.91

... not applicable

Source: Statistics Canada, Longitudinal Immigration Database.

Appendix Table 3
Changes in log entry earnings and contributing factors between the 1981 and 1988 landing cohorts and between the 1988 and 1999 landing cohorts, by sex

	Betweeen 1981 and 1988 landing cohorts		Between 1988 and 1999 landing cohorts	
	All new immigrants	Principal applicants in the economic class	All new immigrants	Principal applicants in the economic class
	log points			
Men				
Total change	-0.061	-0.090	-0.134	-0.199
Changes caused by changes in characteristics	-0.052	-0.101	0.091	0.073
	proportion			
Contributing factors				
Age at landing	-0.27	-0.31	0.06	0.10
Immigration class	0.98	0.23	0.56	0.16
Educational attainment at landing	0.02	-0.10	0.49	1.11
Source region	1.33	1.06	-0.31	-0.45
Language	0.80	0.55	-0.09	-0.32
Geographic distribution	-0.39	-0.21	-0.03	0.03
Regional unemployment rate	-1.46	-0.23	0.10	0.20
Pre-landing Canadian work experience	...	...	0.22	0.18
	log points			
Women				
Total change	0.179	0.271	-0.239	-0.228
Changes caused by changes in characteristics	0.067	0.165	0.032	0.072
	proportion			
Contributing factors				
Age at landing	0.08	0.09	0.03	-0.04
Immigration class	0.23	-0.01	0.00	-0.10
Educational attainment at landing	0.18	0.23	1.25	1.25
Source region	-0.01	0.18	-0.49	-0.06
Language	-0.46	0.15	-0.30	-0.18
Geographic distribution	0.75	0.57	-0.21	-0.38
Regional unemployment rate	0.24	-0.20	0.15	0.01
Pre-landing Canadian work experience	...	...	0.58	0.50

... not applicable

Source: Statistics Canada, Longitudinal Immigration Database.

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